ABSTRACT OF THE DISCLOSURE

An electronic ballast for driving at least one gas discharge lamp from a source of AC power which has a substantially sinusoidal line voltage at a given line frequency. The ballast includes a rectifying circuit having AC input terminals and DC output terminals, the AC input terminals connectable to the source of AC power, the rectifying circuit producing a rectified output voltage at its the DC output terminals when the AC input terminals are energized by the source of AC power; a valley fill circuit having input and output terminals; the input terminals of the valley fill circuit connected to the DC output terminals of the rectifying circuit; an inverter circuit having input terminals and output terminals; the input terminals of the inverter circuit connected to the output terminals of the valley fill circuit and the output terminals of the inverter circuit connectable to the at least one gas discharge lamp and producing a high frequency drive voltage for driving a lamp current through the at least one gas discharge lamp when the AC input terminals are energized by the source of AC power. The inverter circuit has a single controllably conductive device and an inductor; the inductor connectable to the at least one gas discharge lamp; the inverter circuit being adapted to draw current from the source of AC power whereby the total current drawn from the source of AC power has a total harmonic distortion below about 33.3%; and whereby the lamp current has a current crest factor below about 2.1.